

ABSTRACT

5 A vapor sensor is disclosed, which includes a substrate containing a
sensing element, wherein the substrate is located proximate to a sleeve
portion which covers and protects the sensing element. The vapor sensor
also includes a vapor filter or permeable membrane affixed to an end of the
sleeve portion, wherein the end of the sleeve portion is located opposite the
sensing element. A housing and a cover are also provided, such that the
10 housing retains the substrate and the cover snaps onto the housing. The
housing itself includes walls from which a hole is formed through which
vapors may pass. The vapor sensor can be mounted to a gas water heater
in such a manner as to reduce air flow to the sensing element and prevent
tampering of the vapor sensor unit itself.